

REMARKS

Claims 15, 17, 18 and 20-34 are pending in this application. Claims 30-34 remain withdrawn from consideration. By this Amendment, claims 16 and 19 are canceled and claims 15, 17 and 18 are amended. No new matter is added.

I. Claim Amendments

Claim 15 is amended to require that the solid polymer in the binder is an acrylic polymer having reactive endings of the type selected from chlorine/carboxyl, chlorine, hydroxyl or epoxy, and to require that the liquid constituent of the binder is a plasticizer. Support for the amendments to claim 15 can be found at page 5, lines 11-12 of the instant specification. Claims 17 and 18 are amended merely to correct their dependencies. No new matter is added.

II. Withdrawn Claims

Claims 30-34 remain withdrawn from consideration. Claims 30-34 are process claims which depend from claim 15, and thus include all of its limitations of. MPEP §821.04 states that: "if Applicant elects claims directed to the product, and a product claim is subsequently found allowable, withdrawn process claims which depend from or otherwise include all of the limitations of the allowable product claim will be rejoined...[and] will be entered as a matter of right if the Amendment is presented prior to Final Rejection or allowance." Accordingly, upon allowance of product claimed 15, process claims 30-34, which depend from claim 15, must be rejoined and examined under MPEP §821.04.

III. §112 Rejections

Claims 15-18 and 22-29 are rejected under the enablement requirement of 35 U.S.C. §112, first paragraph. Claim 16 is canceled, thus rendering the rejection of this claim moot. Applicants respectfully traverse the rejections of claims 15, 17, 18 and 22-29.

The Office Action states that the instant specification is enabling for a mixture of polyester and resin and a mixture of acrylic and plasticizer. By this Amendment, claim 15 is amended to clarify that the binder is a mixture of at least one solid polymer consisting of an acrylic polymer and at least one liquid constituent consisting of a plasticizer. Accordingly, claim 15 satisfies the enablement requirement of §112, first paragraph. Claims 17, 18 and 22-29 were rejected for depending from claim 15. Accordingly, these dependent claims satisfy the enablement requirements of §112, first paragraph, for at least the same reasons as claim 15.

For at least these reasons, all of claims 15, 17, 18 and 22-29 satisfy the enablement requirements of §112, first paragraph. Reconsideration and withdrawal of the rejection are respectfully requested.

IV. §103 Rejections

A. Scheffee in View of Finck

Claims 15-18 and 22-27 are rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 5,861,571 to Scheffee et al. (Scheffee) in view of U.S. Patent No. 5,458,706 to Finck et al. (Finck). Claim 16 is canceled, thus rendering the rejection of this claim moot. Applicants respectfully traverse the rejection of claims 15, 17, 18 and 22-27.

1. Scheffee in view of Finck Fails to Teach or Suggest Every Feature of the Claims.

Claim 15 is directed to a solvent-free gas-generating pyrotechnic composition comprising a binder, wherein said binder comprises at least one solid polymer consisting of an acrylic polymer having a molecular mass greater than 200,000, and reactive endings of a type selected from the group consisting of chlorine/carboxyl, chlorine, hydroxyl and epoxy, and wherein said binder comprises at least one liquid constituent consisting of a plasticizer. Neither Scheffee nor Finck, alone or in combination, teach or suggest this feature of claim 15.

Scheffee discloses a composition that may include a binder which may contain a polyacrylonitrile having a nitrile reactive ending CN. See Scheffee at col. 4, line 41. However, Scheffee fails to teach or suggest a binder comprising a solid polymer consisting of an acrylic polymer having a molecular mass greater than 200,000 and reactive endings of chlorine/carboxyl, chlorine, hydroxyl or epoxy type, and a liquid constituent consisting of a plasticizer. In fact, the Office Action acknowledges that Scheffee does not teach or suggest a binder having a molecular mass greater than 200,000. Thus, Scheffee does not teach or suggest every feature of claim 15.

To supplement Scheffee's disclosure, the Office Action cites Finck's general disclosure of a binder having a molecular mass from 10,000 to 300,000 which may include acrylic polymers. See the Office Action at page 3, paragraph 7, and Finck at col. 4, lines 49-67. However, Finck fails to overcome the deficiencies of Scheffee. Specifically, Finck fails to teach or suggest a binder comprising a solid polymer consisting of an acrylic polymer having a molecular mass greater than 200,000 and reactive endings of chlorine/carboxyl, chlorine, hydroxyl or epoxy type, and a liquid constituent consisting of a plasticizer.

For at least these reasons, Scheffee, alone or in combination with Finck, fails to teach or suggest every feature of claim 15. Specifically, Scheffee, alone or in combination with Finck, fails to teach or suggest a binder, wherein said binder comprises at least one solid polymer consisting of an acrylic polymer having a molecular mass greater than 200,000, and reactive endings of a type selected from the group consisting of chlorine/carboxyl, chlorine, hydroxyl and epoxy, and wherein said binder comprises at least one liquid constituent consisting of a plasticizer, as required by claim 15. Accordingly, claim 15 is patentable over Scheffee, alone or in combination with Finck.

Claims 17, 18 and 22-29 depend from claim 15, and thus include all of its limitations. Accordingly, these dependent claims are patentable over Scheffee, alone or in combination

with Finck, for at least the same reason as claim 15. Reconsideration and withdrawal of the rejection are respectfully requested.

2. There is No Motivation to Combine Finck with Scheffee

The Office Action states that it would have been obvious to one skilled in the art to use the binder disclosed in Finck with the gas composition disclosed by Scheffee to achieve the claimed invention. The Office Action bases this argument only on Scheffee's disclosure that a binder can be used with the gas composition and based on Finck's disclosure of a binder for use in allegedly similar gas compositions. As discussed above, the combination of Scheffee and Finck fails to teach or suggest every feature of the claims. Even if the combination of these two references would have rendered the claimed invention obvious, which it does not, there is no motivation to combine Scheffee and Finck.

The Office Action merely highlights the possibility that Scheffee and Finck might be combined to achieve the claimed invention, simply because these two references fall within the same field. However, the mere fact that it is possible to find two isolated disclosures which might be combined in such a way to produce a new compound does not necessarily render such production obvious unless the art also contains something to suggest the desirability of the proposed combination. In re Bergel, 292 F.2d 955, 956-957, 130 USPQ 206, 208 (CCPA 1961). The mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination. In re Mills, 916 F.2d 680, 16 USPQ2d 1430 (Fed. Cir. 1990). The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure. In re Vaeck, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

The Office Action merely states that the gas composition of Scheffee may include a binder, and that Finck discloses a binder. However, in the absence of the instant claims, the

Office Action offers no reason why one skilled in the art would have been motivated to modify Scheffee's gas composition with a very specific embodiment of Finck's binder. In particular, the Office Action fails to demonstrate why one skilled in the art would specifically select an acrylic polymer over the other polymers disclosed by Finck and then also specifically select a polymer with a molecular weight greater than 200,000 and greater than the molecular weight disclosed in Scheffee, in view of Finck's disclosure of a wide molecular weight range (i.e., 10,000-300,000).

For at least these reasons, the Office Action fails to provide motivation for one skilled in the art to modify Scheffee's disclosed gas composition in view of Finck's binder disclosure to achieve the claimed invention, in the absence of the instant application. Accordingly, one skilled in the art would not have been motivated to combine the disclosures of Scheffee and Finck to practice the claimed invention. Reconsideration and withdrawal of the rejection are respectfully requested.

B. Knowlton in View of Finck

Claims 15-18 and 22-25 are rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 5,780,768 to Knowlton et al. (Knowlton) in view of Finck. Claim 16 is canceled, thus rendering the rejection of this claim moot. Applicants respectfully traverse the rejection of claims 15, 17, 18 and 22-25.

1. Knowlton in view of Finck Fails to Teach or Suggest Every Feature of the Claims.

Claim 15 and Finck are discussed above. For the reasons discussed below, neither Knowlton nor Finck, alone or in combination, teach every feature of claim 15.

Knowlton discloses a composition used in an air bag inflator device, and generally mentions that the composition may include a binder. See Knowlton at col. 10, lines 17-20. However, Knowlton fails to teach or suggest a binder comprising a solid polymer consisting

of an acrylic polymer having a molecular mass greater than 200,000 and reactive endings of chlorine/carboxyl, chlorine, hydroxyl or epoxy type, and a liquid constituent consisting of a plasticizer. In fact, the Office Action acknowledges that Knowlton does not teach or suggest a binder having a molecular mass greater than 200,000. Thus, Knowlton does not teach or suggest every feature of claim 15.

Finck fails to overcome the deficiencies of Knowlton. Specifically, as described above, Finck fails to teach or suggest a binder comprising a solid polymer consisting of an acrylic polymer having a molecular mass greater than 200,000 and reactive endings of chlorine/carboxyl, chlorine, hydroxyl or epoxy type, and a liquid constituent consisting of a plasticizer.

For at least these reasons, Knowlton, alone or in combination with Finck, fails to teach or suggest every feature of claim 15. Specifically, Knowlton, alone or in combination with Finck, fails to teach or suggest a binder, wherein said binder comprises at least one solid polymer consisting of an acrylic polymer having a molecular mass greater than 200,000, and reactive endings of a type selected from the group consisting of chlorine/carboxyl, chlorine, hydroxyl and epoxy, and wherein said binder comprises at least one liquid constituent consisting of a plasticizer, as required by claim 15. Accordingly, claim 15 is patentable over Knowlton, alone or in combination with Finck.

Claims 17, 18 and 22-25 depend from claim 15, and thus include all of its limitations. Accordingly, these dependent claims are patentable over Knowlton, alone or in combination with Finck, for at least the same reason as claim 15. Reconsideration and withdrawal of the rejection are respectfully requested.

2. There is No Motivation to Combine Finck with Knowlton

The Office Action states that it would have been obvious to one skilled in the art to use the binder disclosed in Finck with the composition disclosed by Knowlton to achieve the

claimed invention. The Office Action bases this argument only on Knowlton's disclosure that a binder can be used with the composition and based on Finck's disclosure of a binder for use in allegedly similar compositions. As discussed above, the combination of Knowlton and Finck fails to teach or suggest every feature of the claims. Even if the combination of these two references would have rendered the claimed invention obvious, which it does not, there is no motivation to combine Knowlton and Finck.

The Office Action merely highlights the possibility that Knowlton and Finck might be combined to achieve the claimed invention, simply because these two references fall within the same field. However, the mere fact that it is possible to find two isolated disclosures which might be combined in such a way to produce a new compound does not necessarily render such production obvious unless the art also contains something to suggest the desirability of the proposed combination. In re Bergel, 292 F.2d 955, 956-957, 130 USPQ 206, 208 (CCPA 1961). The mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination. In re Mills, 916 F.2d 680, 16 USPQ2d 1430 (Fed. Cir. 1990). The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure. In re Vaeck, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

The Office Action merely states that the composition of Knowlton may include a binder, and that Finck discloses a binder. However, in the absence of the instant claims, the Office Action offers no reason why one skilled in the art would be motivated to modify Knowlton's composition with a very specific embodiment of Finck's binder. In particular, the Office Action fails to demonstrate why one skilled in the art would have specifically selected an acrylic polymer over the other polymers disclosed by Finck and then also specifically

select a polymer with a molecular weight greater than 200,000 in view of Finck's disclosure of a wide molecular weight range (i.e., 10,000-300,000).

For at least these reasons, the Office Action fails to provide motivation for one skilled in the art to modify Knowlton's disclosed composition in view of Finck's binder disclosure to achieve the claimed invention, in the absence of the instant application. Accordingly, one skilled in the art would not have been motivated to combine the disclosures of Knowlton and Finck to practice the claimed invention. Reconsideration and withdrawal of the rejection are respectfully requested.

C. Cabrera in View of Finck

Claims 15-18 and 22-27 are rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 6,123,359 to Cabrera et al. (Cabrera) in view of Finck. Claim 16 is canceled, thus rendering the rejection of this claim moot. Applicants respectfully traverse the rejection of claims 15, 17, 18 and 22-27.

1. Cabrera in view of Finck Fails to Teach or Suggest Every Feature of the Claims.

Claim 15 and Finck are discussed above. For the reasons discussed below, neither Cabrera nor Finck, alone or in combination, teach every feature of claim 15.

Cabrera discloses a composition used in an air bag inflation device that may include a nitrocellulose binder. See Cabrera at Table 1. However, Cabrera fails to teach or suggest a binder comprising a solid polymer consisting of an acrylic polymer having a molecular mass greater than 200,000 and reactive endings of chlorine/carboxyl, chlorine, hydroxyl or epoxy type, and a liquid constituent consisting of a plasticizer. In fact, the Office Action acknowledges that Cabrera does not teach or suggest a binder having a molecular mass greater than 200,000. Thus, Cabrera does not teach or suggest every feature of claim 15.

Finck fails to overcome the deficiencies of Cabrera. Specifically, as described above, Finck fails to teach or suggest a binder comprising a solid polymer consisting of an acrylic polymer having a molecular mass greater than 200,000 and reactive endings of chlorine/carboxyl, chlorine, hydroxyl or epoxy type, and a liquid constituent consisting of a plasticizer.

For at least these reasons, Cabrera, alone or in combination with Finck, fails to teach or suggest every feature of claim 15. Specifically, Cabrera, alone or in combination with Finck, fails to teach or suggest a binder, wherein said binder comprises at least one solid polymer consisting of an acrylic polymer having a molecular mass greater than 200,000, and reactive endings of a type selected from the group consisting of chlorine/carboxyl, chlorine, hydroxyl and epoxy, and wherein said binder comprises at least one liquid constituent consisting of a plasticizer, as required by claim 15. Accordingly, claim 15 is patentable over Cabrera, alone or in combination with Finck.

Claims 17, 18 and 22-27 depend from claim 15, and thus include all of its limitations. Accordingly, these dependent claims are patentable over Cabrera, alone or in combination with Finck, for at least the same reason as claim 15. Reconsideration and withdrawal of the rejection are respectfully requested.

2. There is No Motivation to Combine Finck with Cabrera

The Office Action states that it would have been obvious to one skilled in the art to use the binder disclosed in Finck with the gas composition disclosed by Cabrera to achieve the claimed invention. The Office Action bases this argument only on Cabrera's disclosure that a binder can be used with the composition and based on Finck's disclosure of a binder for use in allegedly similar compositions. As discussed above, the combination of Cabrera and Finck fails to teach or suggest every feature of the claims. Even if the combination of these

two references would have rendered the claimed invention obvious, which it does not, there is no motivation to combine Cabrera and Finck.

The Office Action merely highlights the possibility that Cabrera and Finck might be combined to achieve the claimed invention, simply because these two references fall within the same field. However, the mere fact that it is possible to find two isolated disclosures which might be combined in such a way to produce a new compound does not necessarily render such production obvious unless the art also contains something to suggest the desirability of the proposed combination. In re Bergel, 292 F.2d 955, 956-957, 130 USPQ 206, 208 (CCPA 1961). The mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination. In re Mills, 916 F.2d 680, 16 USPQ2d 1430 (Fed. Cir. 1990). The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure. In re Vaeck, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

The Office Action merely states that the composition of Cabrera may include a binder, and that Finck discloses a binder. However, in the absence of the instant claims, the Office Action offers no reason why one skilled in the art would have been motivated to modify Cabrera's composition with a very specific embodiment of Finck's binder. In particular, the Office Action fails to demonstrate why one skilled in the art would have specifically selected an acrylic polymer over the other polymers disclosed by Finck and then also specifically select a polymer with a molecular weight greater than 200,000 in view of Finck's disclosure of a wide molecular weight range (i.e., 10,000-300,000).

For at least these reasons, the Office Action fails to provide motivation for one skilled in the art to modify Cabrera's disclosed composition in view of Finck's binder disclosure to achieve the claimed invention, in the absence of the instant application. Accordingly, one

skilled in the art would not have been motivated to combine the disclosures of Cabrera and Finck to practice the claimed invention. Reconsideration and withdrawal of the rejection are respectfully requested.

E. Scheffee or Knowlton or Cabrera in view of Finck and further in view of Matsuda

Claims 28-29 are rejected under 35 U.S.C. §103(a) as being unpatentable over Scheffee in view of Finck and further in view of U.S. Patent No. 5,780,767 to Matsuda et al. (Matsuda); as being unpatentable over Knowlton in view of Finck and further in view of Matsuda; and as being unpatentable over Cabrera in view of Finck and further in view of Matsuda. Applicants respectfully traverse the rejections.

Claim 15, Scheffee, Knowlton, Cabrera and Finck are discussed above. Claims 28 and 29 depend from claim 15, and thus include all of its limitations. For the reasons discussed below, none of the cited references, alone or in combination, teaches or suggests every feature of claim 28 or of claim 29.

Matsuda is cited for its disclosure of the use of potassium titanate in a gas generating composition for use in an air bag apparatus. See the Office Action at p. 5, paragraph 10, and Matsuda at Table 1 and col. 3, lines 27-30. However, Matsuda fails to overcome the above-described deficiencies of Scheffee, Knowlton, Cabrera and Finck. Specifically, Matsuda fails to teach or suggest a binder comprising a solid polymer consisting of an acrylic polymer having a molecular mass greater than 200,000 and reactive endings of chlorine/carboxyl, chlorine, hydroxyl or epoxy type, and a liquid constituent consisting of a plasticizer.

For at least these reasons, Scheffee or Knowlton or Cabrera in view of Finck and further in view of Matsuda, fails to teach or suggest every feature of claim 15. Specifically, Scheffee or Knowlton or Cabrera in view of Finck and further in view of Matsuda, fails to teach or suggest a binder, wherein said binder comprises at least one solid polymer consisting of an

acrylic polymer having a molecular mass greater than 200,000, and reactive endings of a type selected from the group consisting of chlorine/carboxyl, chlorine, hydroxyl and epoxy, and wherein said binder comprises at least one liquid constituent consisting of a plasticizer, as required by claim 15. Accordingly, claim 15 is patentable over Scheffee or Knowlton or Cabrera in view of Finck and further in view of Matsuda.

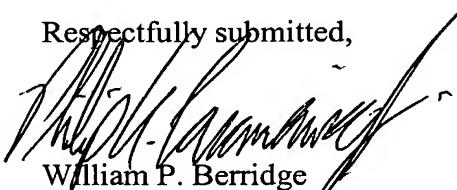
Claims 28 and 29 depend from claim 15, and thus include all of its limitations. Accordingly, these dependent claims are patentable over Scheffee or Knowlton or Cabrera in view of Finck and further in view of Matsuda for at least the same reason as claim 15. Reconsideration and withdrawal of the rejection are respectfully requested.

V. Conclusion

In view of the foregoing, it is respectfully submitted that this application is in condition for allowance. Favorable reconsideration and prompt allowance of claims 15, 17, 18 and 20-34 are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact the undersigned representative at the telephone number listed below.

Respectfully submitted,



William P. Berridge
Registration No. 30,024

Philip A. Caramanica, Jr.
Registration No. 51,528

WPB:PAC/tea

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OLIFF & BERRIDGE, PLC
P.O. Box 19928
Alexandria, Virginia 22320
Telephone: (703) 836-6400

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